(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 25 March 2004 (25.03.2004)

(10) International Publication Number WO 2004/023983 A3

(51) International Patent Classification7:

A61B 5/04

(21) International Application Number:

PCT/US2003/028700

(22) International Filing Date:

12 September 2003 (12.09.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

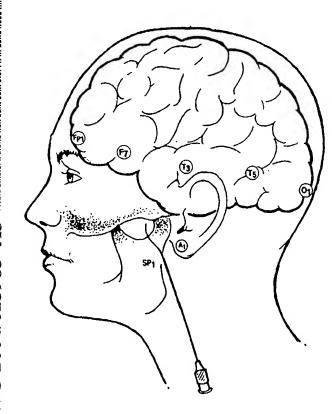
- 60/410,695 13 September 2002 (13.09.2002)
- (71) Applicant (for all designated States except US): THE REGENTS OF THE UNIVERSITY OF MICHI-GAN [US/US]; 3003 South State Street, Ann Arbor, MI 48109-1280 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SAVIT, Robert [US/US]; 1606 Brooklyn, Ann Arbor, MI 48104 (US). DRURY, Ivo [US/US]; 728 Onondaga Street, Ann Arbor,

MI 48104 (US). LI, Dingzhou [CN/US]; 1877 Lake Lila Drive, Apartment C2, Ann Arbor, MI 48105 (US). ZHOU, Weiping [CN/US]; 2361 Bishop, Apartment 3, Ann Arbor, MI 48105 (US).

- (74) Agents: BORDNER, Thomas, J. et al.; Medlen & Carroll, LLP, Suite 350, 101 Howard Street, San Francisco, CA 94105 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: NONINVASIVE NONLINEAR SYSTEMS AND METHODS FOR PREDICTING SEIZURE



(57) Abstract: The present invention relates to methods and devices for noninvasive nonlinear prediction of ictal onset in patients afflicted by neurological disease. In particular, the present invention provides methods and devices for noninvasive nonlinear prediction of seizures in patients afflicted with epilepsy. The devices and methods preferably being based on analysis of two or more electroencephalogram (EEG) recordings, one set of recordings taken from an electrode close to the region of ictal onset, and a second or more set of recordings (e.g., concurrent readings) taken from a region remote from the region of ictal onset.

WO 2004/023983 A3

ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 24 June 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.